

**REMARKS/DISCUSSION OF ISSUES**

By this amendment, Applicant amends claims 1, 5, 9, 11 and 19.

Accordingly, claims 1-22 are pending in the application.

Reexamination and reconsideration are respectfully requested in view of the following remarks.

**35 U.S.C. § 101**

The Office Action rejects claims 1-22 under 35 U.S.C. § 101 as allegedly being directed to nonstatutory subject matter.

Applicant respectfully traverses these rejections under 35 U.S.C. § 101.

35 U.S.C. § 101 states that:

*"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."*

Claims 1-14 are directed to method for evaluating a random number generator; claims 14-18 are directed to apparatuses; and claims 19-2 are directed to machine-readable media having stored thereon data representing sequences of instructions. There is no allegation in the Office Action that the processes, apparatuses or machine-readable media are not useful. Indeed, Applicant respectfully submits that they are all very useful for determining when a random number generator is functioning properly, or malfunctioning (e.g., due to excessive heat).

Now, in this Office Action, the Examiner asserts that claims 1-22 are all directed to an "abstract idea" or "mathematical algorithm."

Applicant respectfully disagrees.

None of the claims 1-22 is directed to an "abstract idea" or "mathematical algorithm." Claims 1-14 are directed to method for evaluating a random number

generator; claims 14-18 are directed to apparatuses; and claims 19-22 are directed to machine-readable media having stored thereon data representing sequences of instructions.

For example, claim 1 includes determining whether operations of the random number generator are defective based on an output of the comparison. Respectfully, what kind of "mathematical algorithm" is THAT supposed to be?!? Similarly: claim 9 recites determining that the random number generator is operating defectively when the output of the computed exponential averaging operation falls outside the predetermined acceptance range; claim 14 recites a switching unit, coupled to the output of the random generator unit and an output of the detector unit, for disabling the flow of the sequences when the generated random sequences are determined to be predictable; and claim 19 recites a machine-readable medium and comparing an output of an exponential averaging operation to a predetermined acceptance range. NONE of those things are "mathematical algorithms."

Applicant also notes that claims 4, 11 and 12 all recite concrete operations to be performed based on the determination as to whether the random number generator is functioning properly. Applicant respectfully traverses all of the Office Action from the last two words on page 3 through page 4, line 4 and respectfully requests that the Examiner withdraw those statements or provide statutory or case law in support of them.

Applicant also specifically traverses paragraphs 5-6 of the Office Action on pages 4 and 5. There is no mention of any computer in claims 15-19. Furthermore, the Office Action improperly recharacterizes Applicant's claims and improperly imports language from the specification into the claims. Applicant directs the Examiner's attention to Applicant's specification at page 5, lines 13-17, page 10, lines 19-21 ("functionally equivalent circuits such as a digital signal processor circuit or an application-specific-integrated circuit (ASIC)"); page 14, lines 1-9. Accordingly, it is totally improper for the Examiner to imply in any way that claims 15-19 must be "implemented in software" or "rendering" the means for language as "computer software."

So, no one of ordinary skill in the art who actually bothered to read Applicant's claims and Applicant's disclosure would ever possibly construe claims 15-18 as "representing a computer program per se."

Meanwhile – inexplicably – the Office Action notes in paragraph 5 that "a computer-readable medium encoded with a computer program . . . is thus statutory" and yet for some unexplained reason it rejects claims 19-22 which are directed to exactly such a computer-readable medium!

Therefore, for at least these reasons, Applicant respectfully submits that claims 1-22 are all clearly statutory subject matter under 35 U.S.C. § 101. Accordingly, Applicant respectfully requests that the rejections of claims 1-22 under 35 U.S.C. § 101 all be withdrawn.

### **35 U.S.C. § 112**

The Office Action rejects claims 6, 8, 13, 14, 17, 18 and 21 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Applicant respectfully traverses those rejections.

The Examiner claims that claims 6, 13, 17 and 21 do not recite an exponential averaging operation.

Applicant respectfully disagrees.

Applicant once again insists that the claims 6, 14, 17 and 21 all properly recite an equation for updating the exponential averaging operation, as such an operation is properly defined in light of the specification. Indeed, the equation perfectly describes an exponential averaging operation (i.e., an averaging operation where older values have exponentially less weight) and not a "linear function count" as asserted by the Examiner. In this regard, it is noted that old values are multiplied repeatedly by the

factor  $\left(1 - \left(\frac{1}{n}\right)\right)$  where  $n$  is  $\gg 1$ , such that over a large number of operations,  $n$ , the

old values are multiplied by  $\left(1 - \left(\frac{1}{n}\right)\right)^n$  which is known to anyone of skill in the art to approach  $1/e$  at the limit, thus yielding an exponential average – and not a "linear

function count" as the Examiner repeatedly and mistakenly asserts.

Accordingly, Applicant respectfully submits that all of the claims 6, 8, 13, 14, 17, 18 and 21 are patentable under 35 U.S.C. § 112, second paragraph.

### **OBVIOUSNESS-TYPE DOUBLE PATENTING**

The Office Action rejects claims 1-22 as supposedly being unpatentable over claims 1-21 of U.S. Patent 6,947,960 ("Hars 3").

Applicant respectfully traverses these rejections for at least the following reasons.

At the outset, M.P.E.P. §§ 804(II)(B), 2142, and 2143 describe the requirements for a prima facie case of obviousness. The Office Action fails to meet those requirements at all. For example, the Office Action fails establish that the claims of Hars 3 teach or suggest all of the claim limitations of any of the claims 1-22 of the present application.

Interestingly, the Examiner does not bother to try to explain how or why any of the claims in Hars 3 supposedly teach or suggest all of the claim limitations of claim 1 of this patent application, but instead jumps right to claim 14.

Of course it is readily apparent that none of the claims in Hars 3 teach or suggest all of the claim limitations of claim 1 of this patent application! For example, none of the claims in Hars 3 disclose or suggest determining an average number of bits that have a value of a predetermined logic value at a predefined range of intervals using an exponential averaging operation (A), and comparing an output of the exponential averaging operation to a predetermined acceptance range.

Regarding the only claim - claim 14 - that the Examiner actually discusses, it is apparent from the Examiner's own table that Hars 3 does not disclose or suggest all of the claim limitations of claim 14. For example, nothing in the sample claim in Hars 3 discloses or suggests determining an average number of bits that have a value of a predetermined logic value at a predefined range of intervals using an exponential averaging operation (A), and comparing an output of the exponential averaging operation to a predetermined acceptance range.

Furthermore, Applicant affirmatively submits that claims 1-22 of the present application are patentable over the claims 1-21 of Hars 3. Hars 3 claims a method that determines an auto-correlation value of bit sequences generated by a random number generator. In contrast, the claims of the present application all recite the determination of an average number of occurrences of a logical value using an exponential averaging operation. One of ordinary skill in the art would easily recognize that an average of the number of occurrences of a logical value is substantially independent of the repetitive nature of the sequence of logical values, as determined by the auto-correlation value. Accordingly, for at least these reasons, Applicant respectfully traverses the Obviousness-Type Double Patenting rejections of claims 1-22, and respectfully requests that these rejections be withdrawn.

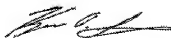
### **CONCLUSION**

In view of the foregoing explanations, Applicant respectfully requests that the Examiner reconsider and reexamine the present application, allow claims 1-22 and pass the application to issue.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment (except for the issue fee) to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

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